

Appl. No. 09/693,019
Amdt. April 20, 2004
Reply to Office Action of February 3, 2004

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Listing of Claims:

Claim 1 (cancelled)

Claim 2 (amended) In a network having a plurality nodes and mobile stations, a method for forwarding transient data packets from a corresponding host node in a first SIP-compliant network environment to a mobile ~~node~~ station, said mobile ~~node~~ station having traveled from said first compliant SIP-network environment to a second SIP-compliant network environment, said method comprising:

reinviting said corresponding host node to said mobile ~~node~~ station using SIP INVITE, said mobile ~~node~~ station being in said second SIP-compliant network environment;

creating a ~~short-lived~~ tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller within said second SIP-compliant network environment using the a SIP INFO method;

forwarding said transient data packets to said mobile ~~node~~ station via said tunnel;
and

discontinuing said forwarding of said data packets to said mobile ~~node~~ station after a brief time-out period.

Claim 3 (amended) For use in a SIP-compliant network having a plurality of nodes and mobile stations, a SIP_EYE Agent for monitoring and tracking all TCP connections and their related identifiers within a mobile ~~node~~ station, said SIP_EYE Agent comprising:

a record of each of said TCP ~~connection~~ connections, each record having associated therewith:

- (a) an original IP address of said mobile ~~node~~ station,
- (b) a previous IP address of said mobile ~~node~~ station,
- (c) a current IP address of said mobile ~~node~~ station, and
- (d) an original IP address of a corresponding host node;

wherein said original IP address of said mobile ~~node~~ station is the IP address of said mobile ~~node~~ station at the beginning of the TCP connection, said previous IP address of said mobile ~~node~~ station is the last IP address of said mobile ~~node~~ station just before the current IP address of said mobile ~~node~~ station, and said original IP address of said

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corresponding host node is the IP address of said corresponding host node at the beginning of the TCP connection.

Claim 4 (amended) In a SIP-compliant network having a plurality of nodes and mobile stations, a method for reducing the amount of time a mobile node has to register and configure itself in a visiting environment, said method comprising:

adding a ~~registration/hand-off~~ registration or hand-off option to the a SIP REGISTER method; and

equipping a SIP registrar node with a DHCP client node and co locating said registrar node with a DHCP server node to enable said SIP registrar node to assign an IP address to said mobile node station thereby reducing IP acquisition time.

Claim 5 (amended) A method according to claim 4 further comprising replicating a profile of said mobile node station in said visiting environment to reduce said authentication time of said mobile node station.

Claim 6 (cancelled)

Claim 7 (amended) A computer-readable medium having computer executable instructions for performing a method for providing mobility support from a first SIP-compliant network environment to a second SIP-compliant network environment, said method comprising:

assigning a personal identifier to a mobile user;

associating said personal identifier to a mobile ~~terminal~~ station;

associating a first temporary IP address from said first environment with said personal identifier;

receiving packets of data at said mobile ~~terminal~~ station from a corresponding host wherein each of said packets of data comprises a source IP address and a destination IP address, said destination IP address being said first temporary IP address and said source IP address being said IP address associated with said corresponding host;

monitoring said mobile ~~terminal~~ station to sense movement of said mobile ~~terminal~~ station from said first environment to said second environment;

associating a second temporary IP address from said second environment with said personal identifier;

forwarding to said second temporary IP address packets of data having said first temporary IP address as said destination address;

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sending said second temporary IP address to said source IP address; and

discontinuing forwarding of packets of data having said first temporary address as said destination address to said second temporary IP address.

Claim 8 (amended) A computer-readable medium having computer-executable instructions for performing a method to be executed in a network adapted to support mobility having a plurality of nodes and mobile stations; said method for forwarding transient data packets from a corresponding host node in a first SIP-compliant network environment to a mobile ~~node~~ station, said mobile ~~node~~ station having traveled from said first SIP-compliant network environment to a second SIP-compliant network environment, said method comprising:

reinviting said corresponding host node to said mobile ~~node~~ station using SIP INVITE, said mobile ~~node~~ station being in said second SIP-compliant network environment;

creating a ~~short-lived~~ tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller located within said second SIP-compliant network environment using ~~the~~ a SIP INFO method;

forwarding said transient data packets to said mobile ~~node~~ station via said tunnel; and

discontinuing said forwarding of said data packets to said mobile ~~node~~ station after a ~~brief~~ time-out period.

Claim 9 (amended) A computer-readable medium having computer-executable instructions for performing a method to be executed in a SIP-compliant network having a plurality of nodes and mobile stations, said method for reducing the amount of time a mobile ~~node~~ station takes to register and configure itself in a visiting environment and comprising:

adding a ~~registration/hand-off~~ registration or hand-off option to ~~the~~ a SIP REGISTER method; and

equipping a SIP registrar node with a DHCP client node and co locating said SIP registrar node with a DHCP server node to enable said registrar node to assign an IP address to said mobile ~~node~~ station thereby reducing IP address acquisition time.

Claim 10 (amended) A computer-readable medium having computer-executable instructions for performing a method according to claim 9 further comprising replicating

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a profile of said ~~mobile node~~ station in said visiting environment to reduce said authentication time of said mobile ~~node~~ station.

Claim 11 (cancelled)

Claim 12 (amended) A system for providing mobility support from a first SIP-compliant network environment to a second SIP-compliant network environment, said system comprising:

a processor programmed to:

assign a personal identifier to a mobile user;

associate said personal identifier to a mobile terminal station;

associate a first temporary IP address from said first environment with said personal identifier;

receive packets of data at said mobile terminal station from a corresponding host wherein each of said packets of data further comprises a source IP address and a destination IP address, said destination address being said first temporary IP address and said source IP address being ~~said~~ an IP address associated with said corresponding host;

monitor said mobile ~~terminal~~ station to sense movement of said mobile ~~terminal~~ station from said first environment to said second environment;

associate a secondary temporary IP address from said second environment with said personal identifier;

forward to said second temporary IP address packets of data having said first temporary IP address as said destination address;

send said second temporary IP address to said source IP address; and

discontinue forwarding of packets of data having said first temporary address as said destination address to said second temporary IP address.

Claim 13 (amended) A system for forwarding transient data packets addressed to a mobile ~~node~~ station from a corresponding host node in a first SIP-compliant network environment, said mobile ~~node~~ station having traveled from said first SIP-compliant network environment to a second SIP-compliant network environment, said method comprising:

a processor programmed to:

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reinvite said corresponding host node to said mobile ~~node~~ station using SIP INVITE; said mobile node in said second SIP-compliant network environment;

create a ~~short-lived~~ tunnel between a first edge router and controller located within said first SIP-compliant network environment and a second edge router and controller located within said second SIP-compliant network environment using ~~the~~ a SIP INFO method;

forward said transient data packets to said mobile ~~node~~ station via said tunnel; and

discontinue said forwarding of said data packets to said mobile ~~node~~ station after a brief time-out period.

Claim 14 (amended) A system for reducing the amount of time a mobile ~~node~~ station takes to register and configure itself in a visiting SIP-compliant network environment, comprising:

a processor programmed to:

add a ~~registration/hand-off~~ registration or hand-off option to ~~the~~ a SIP REGISTER method; and

equip a SIP registrar node with a DHCP client node and co locating said SIP registrar node with a DHCP server node to enable said SIP registrar node to assign an IP address to said mobile ~~node~~ station thereby reducing IP acquisition time.

Claim 15. (amended) A system according to claim 14 wherein said processor is further programmed to replicate a profile of said mobile ~~node~~ station in said visiting environment to reduce authentication time of said mobile ~~node~~ station.

Claim 16 (cancelled)